V.—*Notes on Swiss Mollusca.*

By J. Gwyn Jeffreys, Esq., F.R.S.

Having spent the last summer and autumn with my family at Lausanne, on the Lake of Geneva, during which period I collected with some assiduity the land and freshwater shells in that district, and also made occasional excursions, with the same object, to the adjoining Cantons of the Valais and Geneva (thus embracing in my circuit the highest Alps and lowest valleys in Switzerland), I am induced to think that a notice of some hitherto unrecorded localities which thus occurred to me may be interesting to those who have studied this branch of natural history; and more especially if considered with regard to the geographical distribution of animals, a subject which has of late years much engrossed the attention of naturalists.

In making this communication, I must, in the first place, acknowledge the great obligation I feel to my kind and hospitable friend, M. de Charpentier of Devens, near Bex, who not only gave me free and frequent access to his fine collection of land and freshwater shells, but furnished me with many valuable notes (of which I will here, with his permission, avail myself) by way of supplement to his "Catalogue des Mollusques Terrestres et Fluviatiles de la Suisse," which forms part of the Transactions of the Helvetic Society, published at Neufchâtel in 1837. No one can appreciate more highly than myself the discrimination and accuracy of this celebrated *savant*, as well as his disinclination to increase the already too numerous list of so-called species. I had also the pleasure of forming an agreeable, but transient, acquaintance with the Abbé Stabile, who published at Lugano in 1845 a Catalogue of the Land and Freshwater Shells of that district. With these two exceptions, I am not aware that Switzerland now possesses any native conchologist; although the country has been for a period of between thirty and forty years indefatigably explored by Studer, Monnard, Venetz, Mousson, Thomas, Charpentier, and others in search of Mollusca.

The immediate vicinity of Lausanne, where I was located, consists of an irregular and comparatively low range of hills called the Jorat (the highest of which, Le Pélerin, is 2148 feet above the lake, and 3300 feet above the sea-level), and belongs to a geological formation termed "Molasse" (a soft and friable sandstone of the carboniferous series), and it presents very few characteristic forms of Mollusca. Indeed if it were not for the different scenery and mode of cultivating the land, a conchologist might almost fancy himself to be in one of the midland counties of England. The southern flanks of the Jura also yielded many species which are common on our own mountain

limestone. But the difference of form is chiefly perceptible on the Alps and in the Alpine valleys, where the sister kingdoms of Botany and Entomology also hold their courts and delight the naturalist. Some species are only found on the confines of Italy, although in a subalpine zone, and appear to depend on latitude rather than on climate or temperature. One species (*Helix sylvatica*) is found as well on the plains of the Rhone Valley, as (though dwarfed in size) at a height of many thousand feet above the level of the sea. The shores of Lake Leman offered the lowest elevation above that level, being, according to Keller's map, 1150 feet; and the highest point at which I found living Mollusca was the Ryfel, about 8000 feet (near Monte Rosa, in the Haut Valais), where *Vitrina diaphana*, var. (*V. glacialis* of Forbes) occurs in ground which is almost constantly frozen. How far specific variation may be influenced by climate, temperature, or latitude, is a difficult problem, which requires for its solution far more materials and data than we as yet possess.

I will now plunge *in medias res*, adopting Charpentier's Catalogue as my text-book.

Vitrina diaphana, Draparnaud.

Rochers Naye and Dent de Jaman; Mont Tendre, on the Jura; Zermatt; Le Saléve, near Geneva. Not uncommon.

Var. α. Spira utrinque compressa. Animal nigro-fuscum.

Vitrina glacialis, Forbes "On Alpine Testacea," in Magazine of Zoology and Botany, vol. i.

Le Ryfel, near Monte Rosa, in the Haut Valais, at an elevation of about 8000 feet above the sea.

My late lamented friend, Professor Edward Forbes, considered this to be a distinct species, because of the darker colour of the animal; but the gradations of colour and form from this variety to the next through the typical species, are almost imperceptible.

Var. β. Spira superne prominula. *Vitrina nivalis*, Charp.

Alps near Bex (Charp.);—Valley of St. Nicholas. Rare.

Vitrina pellucida, Müller.

Rochers Naye; Chable; Belmont and Les Pierrettes, near Lausanne; Devens. Common.

Vitrina annularis, (Venetz), Férussac. *V. subglobosa*, Michaud and Morelet.

Devens; Sion; Foully (Charp.);—Valley of St. Nicholas; St. Maurice; Chable in the Vallée de Bagnes. Rare.

This species has also been lately taken by Mr. Mac Andrew at Burgos in Spain, at an elevation of between 2000 and 3000 feet above the level of the sea.

Vitrina elongata, Drap.

Valley of St. Nicholas, at an elevation of about 4000 feet. Rare.

This species had not been found before in Switzerland, and was supposed to be confined to the champaign parts of France and Germany.

Succinea Pfeifferi, Rossmässler.

Clarens; Martigny (Charp.);—Lac de Bret; Belmont, and other places near Lausanne; Villeneuve; Vallée de Bagnes; Visp; Lacs de Joux et Brenet. Rather common.

At first considered by Charpentier to be a variety of *Succinea putris.*

Succinea oblonga, Drap.

Valley of the Rhone (Charp.). With the last: not uncommon.

A variety of a larger size and greenish colour occurred to me in Belmont Wood, near Lausanne.

Helix Pomatia, Linnæus.

I found a depauperated variety, of the usual size, on the Dent de Jaman, at the height of about 5000 feet.

Helix aspersa, Müll.

It is remarkable that our common garden snail, which is so widely dispersed, from the Shetland Isles to Algiers, is not indigenous to Switzerland or any part of Germany. It is said that the extreme severity of the cold in winter prevents its inhabiting the latter countries.

Helix sylvatica, Drap.

This local species did not occur to me in the Jura, or westward of Vevay, although it is common in the Alps, and plains to the east.

Helix zonata, Studer.

Valleys of Entremont, St. Nicholas, and St. Bernard; Simplon; Tessin; Airolo (Charp.). I also found it at Zermatt, Randa, and St. Nicholas, in the last-named valley.

Helix personata, Drap.

Bex; Kandersteig, and Valley of the Lac de Joux (Charp.);—Chailly, and Belmont, near Lausanne; Mont Tendre; Rochers Naye; Chable; also at Meillierie in Savoy. Not uncommon.

Helix holosericea, Studer.

Vallées de Morcles et d'Entremont (Charp.) ;—wood between St. Nicholas and Randa. Not uncommon.

Helix angigyra, Ziegler.

Lugano (Charp.).

Helix lapicida, Linn.

Var. Albida.

Valley of the Dranse.

Helix Nautiliformis (*Drepanostoma*), Porro.

Lugano; Magadino (Charp.).

Helix unidentata, Drap.

Le bas Engadine (Charp.).

Helix edentula, Drap.

Monthez (Charp.) ;—Mont de la Dame, and Mont Tendre, in the Vallée de Joux ; Rochers Naye and Dent de Jaman ; Chable. Local, but gregarious.

Helix fulva, Müll.

Generally diffused, and common.

A variety of a dark horn-colour occurred in marshy places, and a white variety (but rare) near the Findel Glacier, in the Haut Valais.

Helix aculeata, Drap.

Sion, and other parts of the Valais (Charp.);—Belmont and Sauvebelin Woods, near Lausanne, and many other places.

Helix ciliata, (Venetz), Fér.

M. Charpentier was misinformed as to this elegant species having been found in England, whence he states that he received it.

Helix sericea, Drap.

The transition, by connecting links, from this to its polymorphous ally, *Helix hispida,* makes its specific distinctness very doubtful.

Helix cœlata, Stud.

Neighbourhood of Lausanne; shores of the Lac du Brenet; St. Nicholas; Chable. Common.

Helix rufescens, Montagu (var.).

Helix circinata and *montana,* Stud.

Var. Albida.

Mont Tendre.

Helix (*Trichia*) *clandestina,* Hartmann.

Zurich; Lucerne; Schwyz (Charp.).

Helix strigella, Drap.

Foully; Sion; Tourbillon, and other parts of the Valais (Charp.);—Clermont, and on the side of the Geneva road near Lausanne; St. Nicholas; Chable.

Helix fruticum, Drap.

Saléve, near Geneva.

Helix Carthusianella, Drap.

Near Aigle (Charp.), and found by myself at Devens.

Helix incarnata, Drap.

Belmont and Sauvebelin Woods, near Lausanne; Dent de Jaman; Pré de Joux; Vufflens. Common.

Helix candidula, Stud.

Le Saléve, near Geneva.

The *Helix Cenisia* of Charpentier is the *H. apicina* of Lamarck.

Helix rotundata, Müll.

Var. Albida.

Belmont and Berne road, near Lausanne.

Helix ruderata, Stud.

Vallée d'Ormonts (Charp.);—Valley of St. Nicholas and Zermatt, where I also found a greenish-white variety. Not uncommon.

Helix rupestris, Drap.

Var. (?) *H. umbilicata,* Mont.

On rocks and under stones in many places, and at different heights varying from 1200 to 5000 feet above the sea-level. Common.

This species was accidentally omitted by M. Charpentier in his Catalogue. I am not satisfied that the *H. umbilicata* of Montagu is not specifically distinct. This and the typical form are found together on the limestone rocks near St. Maurice.

Helix pygmæa, Drap.

This has an equally extensive range with the last species, and is equally common.

Helix glabra, Fér.

Sion; Martigny; Coire (Charp.); Belmont, near Lausanne; Zermatt.

M. Schmidt, in an elaborate memoir on the genus *Zonites,* and especially on the *Z. alliaria* of Miller (published in the 'Malakozoologische Blatter' for this year), considers these to be distinct species. The *H. alliaria* has been found by M. Grateloup at Dax, in the department of the Landes.

Helix cellaria, Müll.

Devens and other places (Charp.); neighbourhood of Lausanne. Not uncommon.

The *Helix nitens* of Michaud, which M. Charpentier referred to the *H. cellaria* of Studer, is a different species, and allied to *H. nitidula.* It was introduced by him in error as Swiss.

Helix nitidula, Drap.

Var. Albida. *H. Helmii,* Gilbertson.

Belmont Wood, near Lausanne.

Helix petronella, (Charp.), Pfeiff. Helic.

Helix vitrina, Fér.

Enzeindaz, in the Grisons (Charp.);—Mont Tendre; Findel, in the Haut Valais. Rare.

An interesting species, allied to *H. radiatula* of British authors.

Helix radiatula, Alder.

Helix pura, var. *β,* Pfeiff. Helic.

Chamblande and Sauvebelin Wood, near Lausanne; Vufflens; Villeneuve; Terrain and Devens, in the Valley of the Rhone; Visp; St. Nicholas. Not uncommon.

It has also been found, according to M. Terver, near Lyons, and in the Department de l'Oise.

Helix lucida, Drap.

Lac de Bret; Chamblande and other places near Lausanne; Vallée de Bagnes. Common.

Helix pura, Alder.

Helix nitidula, var. *β*, Drap.
Helix nitidosa, Fér.

Belmont and Sauvebelin Woods, near Lausanne; Mont la Ville Not uncommon.

Var. Albida. *Helix viridula* of Menke's Synopsis.

Chable, in the Vallée de Bagnes.

Bulimus radiatus, Drap., and varieties.

About half a league west of Lausanne, on the Geneva road. Common.

Bulimus obscurus, Müll.

Neighbourhood of Lausanne; Blonay; Chable; Saléve; and the Jura. Common.

Var. Albida.

Devens.

Bulimus montanus, Drap.

Belmont Wood, and Berne road near Lausanne.

Pupa tridens, Müll.

Near the rifle-shooting gallery, Lausanne; and rejectamenta of a stream at Chamblande. Local, but gregarious.

Pupa quadridens, Müll.

Neighbourhood of Lausanne; Vevay; Sierre; Zermatt, and other places. Common.

Var. Minor et albida.

Chable.

The last two species are now (and, as I consider, properly) placed among the *Bulimi.*

Pupa edentula, Drap.

Zurich; Clarens (Charp.);—in a marshy piece of ground near Belmont. Not uncommon.

Pupa inornata, Mich.

Winteregg, near the Pass of the Gemmi, by Mr. Shuttleworth (Charp.);—on wet moss and grass in a wood above Zermatt. Not uncommon.

I am not, however, satisfied that it is specifically distinct from *P. edentula.*

Pupa muscorum, Drap. (*Pupa cylindrica,* Fér. et al.)

Bex; Tourbillon (Charp.);—Clermont, near Lausanne; Devens; Les Vallettes, in the Valley of the Dranse; St. Nicholas. Not uncommon.

Var. unidentata (*P. unidentata,* Stud.).

Var. tridentata.

Between Bex and St. Maurice.

The last is a remarkable variety, the arrangement of the teeth being the same as in *P. tridentata.*

Pupa Ferrari, Porro.

Lugano (Charp.).

Pupa pagodula, Desmoulins.

Lugano (Charp.).

Pupa doliolum, Drap.

In a copse near Lausanne; between Bex and St. Maurice. Not uncommon.

Pupa umbilicata, Drap.

Antagne; limestone rocks near a small chapel dedicated to Notre Dame du Sex, St. Maurice (Charp.).

In the last-named locality it is common, as well as a white variety.

Pupa dilucida, Ziegler.

Gondo; Lugano (Charp.).

Closely allied to the last species and to *P. Sempronii.*

Pupa marginata, Drap.

Neighbourhood of Lausanne and Valley of the Dranse. Not uncommon.

Pupa Halleriana, Charp. MS.

I give M. Charpentier's description, which I carefully went over with him:—

"Testa breviter rimata, oblongo-cylindrica, apice obtusa, striatula, sub lente minutissime granulata, nitidula, rufescenti-cornea; anfractus 7, convexiusculi, regulariter accrescentes, ultimus basi in cristam brevem, obtusam, extus scrobiculo notatam, compressus, pone aperturam semi-ovalem, edentulam, callo angusto, concolore, nec albido circumdatus; peristoma reflexiusculum, callo margines jungente penitus destitutum. Alt. 3–3½; diam. 2–2½ mill.

"Prata paludosa prope Tedunum, Saxon, Octodurum, Roche (haud procul a domo ipso Halleri magni); Mousson, Venetz, Charpentier.

"A *Pupa Cupa*, Jan, Kust, t. 16, f. 16, 17, quacum olim confudi et ex errore sub eo nomine ad amicos misi, satis differt: testa minutissime granulata, nec simpliciter striatula; anfractu ultimo obtuso breviterque basi compresso; apertura constanter edentula (in plus quam 100 speciminibus) nec plica parietali instructa, semiovali, nec rotundato-trigona, nec marginibus callo junctis.

"A *Pupa marginata* var. *edentula* facile distinguitur: statura paullim majore, testa magis contracta, callo pone aperturam angustiore, concolore, nec albido et scrobiculo ad cristæ cerviculis basin. Hæc species locos siccos, *P. Halleriana* autem paludosos habitat."

I also found this new and interesting species under stones and at the roots of grass in wet meadows, at Visp, as well as at Chable and another place in the Vallée de Bagnes; so that its elevation may be said to range from about 1250 to double that number of feet above the sea-level. It is not uncommon, although local.

Pupa Alpicola, Charp.

St. Maurice (Charp.); Mont Tendre; Les Vallettes in the Valley of the Dranse. Not uncommon.

I am not satisfied that it is specifically distinct from *P. triplicata*.

Pupa triplicata, Studer.

Saléve; Mont la Ville; Les Pierrettes; Devens; Bex; Vallée de Bagnes; Sierre; Visp; Zermatt. Not uncommon. I also found it near Dijon in France.

Monst. testa sinistrorsa.

Rejectamenta of a small stream into the lake below Lausanne, in which I found a single specimen. It shows the close affinity of form between *Pupa* and *Vertigo*.

Pupa dolium, Drap.

Neighbourhood of Lausanne; Mont la Ville; Lac du Brenet.

Pupa granum, Drap.

St. Leonard; Mont d'Orge (Charp.).

Pupa secale, Drap.

The *Pupa hordeum* of Studer, and quoted by M. Charpentier, is only a variety of the above species. The typical form is universally dispersed, and not confined to the Jura and the Alps.

Pupa variabilis, Drap.

Sion; Foully (Charp.);—Belmont Wood, near Lausanne, but not common there. It is however plentiful at Antagne, near Bex.

Pupa pygmæa, Drap.

Belmont, Savigny road, and Les Pierrettes, near Lausanne; Vufflens; Mont Tendre; Villeneuve; Chable; Visp. Common.

Pupa Shuttleworthiana, Charp.

Bex; Ollon; Soleure (Charp.);—Zermatt; Les Vallettes. Rare.

Pupa antivertigo, Drap.

Belmont and Les Pierrettes; Villeneuve; Chable; Visp. Not uncommon.

Pupa Desmoulinsiana, Dupuy.

P. (Vertigo) Charpentieri, Pfeiff. Helic.

Clarens; Payerne (Charp.).—At the roots of rushes and grass, Visp; and in a marsh about half a league west of Lausanne. Not uncommon.

The animal is dark gray, with its foot or sustentaculum of a paler colour. Tentacula 2 only, rather thick, short, clavate, diverging, and obtuse at their extremities. The body is more slender and of a lighter colour than that of *P. antivertigo* (*septemdentata*), and the tentacula are more decidedly clavate. It feeds on confervæ.

Pupa vertigo, Drap.

Devens (Charp.);—between Bex and St. Maurice; Vallée de Bagnes. Not common.

Pupa Venetzii (Charp.).

Vertigo angustior, mihi, in Linn. Trans. (1828).

Sion (Charp.);—Les Pierrettes, near Lausanne; Villeneuve; Chable. Not uncommon.

Balea perversa, Linn.

Bex (Charp.); Belmont and other places near Lausanne; Les Vallettes; Zermatt. Gregarious, but local.

Clausilia bidens, Drap.

Var. Albida.

Belmont Wood, near Lausanne; Devens.

Clausilia diodon, Stud.

M. Charpentier says that the locality of the Vallée de Bagnes, which he indicated on the authority of M. Venetz, is erroneous, and that it ought to have been Gondo, on the Simplon. He adds, that he found a single, but fresh, specimen among the rejectamenta of the Rhone, near Bex.

Clausilia ventricosa, Drap.
Vallée d'Ormonts; Payerne (Charp.);—Belmont and other places near Lausanne; Rochers Nez; Devens.

Clausilia similis, Charp.
Turbo biplicatus, Mont.
M. Charpentier doubts this species having been ever found in Switzerland, and he thinks *C. plicata* may have been mistaken for it.

Clausilia dubia, Drap., is now generally considered to be synonymous with *C. rugosa.* This variety or form appears to be very common and widely spread in Switzerland.

Clausilia cruciata, Stud., is admitted by M. Charpentier to be another variety of the same species.

Clausilia obtusa, Pfeiff., which M. Charpentier found at Freiburg, is another variety.

Clausilia plicata, Drap.
Zurich; Guevaux; Schwyz (Charp.).

Clausilia Moussonii, Charp.
Zurich (Mousson and Charp.).

Clausilia ornata, Ziegl.
Winteregg (Shuttleworth).

Clausilia Stabilei, Charp.
Clausilia tumida, Stab.
Lugano (Stabile).

Achatina acicula, Müll.
Chamblande, near Lausanne; St. Maurice.

Cionella lubrica, Müll.
Var. Minor seu alpina.
Chable; Zermatt.

Physa hypnorum, Drap.
Foully, and Valley of the Rhone (Charp.); Les Pierrettes, near Lausanne; and also in several parts of the Rhone Valley. Not uncommon.

Physa fontinalis, Drap.
Yverdun; Orbe (Charp.).

Limneus minutus, Drap.

Neighbourhood of Lausanne; Lac du Brenet; Vallée de Bagnes; Valley of the Rhone. Common, and widely dispersed.

Limneus auricularius, Drap.

Lac de Bret; Les Grangettes, and other marshes bordering on the Lake of Geneva.

The *L. acronicus* of Studer (*L. ampullaceus* of Rossmässler) is a well-marked variety or form of this protean species.

Limneus pereger, Drap.

Var. Limneus rimatus, Braun.

Gryon; Chessières (Charp.).

Var. Limneus Blauneri, Shuttl.

Schwartzee, near Zmutt (Shuttl.).

This variety resembles the "*Gulnaria lacustris*" of Leach.

Var. Limneus vulgaris, Pfeiff.

Roche (Charp.).

Limneus elongatus, Drap.

Canton du Tessin (Stab.).

Planorbis contortus, Drap.

Lac du Morat, près de Sallavaux (Charp.);—neighbourhood of Lausanne; Lac du Brenet; marsh between Martigny and St. Maurice. Not uncommon.

Planorbis leucostoma, Mich.

Neighbourhood of Lausanne; Lac de Bret; Vufflens.

This common species is not, however, the *P. spirorbis* of Draparnaud, to which Studer and Charpentier have referred it.

Planorbis carinatus, Drap.

Lakes of Geneva and Brenet.

The variety described by M. Charpentier under the name of *P. intermedius,* is the *P. carinatus* of my Monograph in the 'Linnæan Transactions'; the typical or extreme form having been named by me *P. disciformis.*

Planorbis hispidus, Drap.

Noville; Valley of the Rhone (Charp.);—Les Pierrettes; Lac du Brenet. Not uncommon.

Planorbis subcarinatus, Charp.

Planorbis Draparnaldi, mihi, in Linn. Trans.

M. Charpentier states that the Swiss locality for this species is Delémont, instead of the Lake of Constance; and the latter for his *P. intermedius.*

Planorbis imbricatus, Drap.

Var. Planorbis cristatus of that author.

In a marsh about a league from Lausanne, on the Geneva road.

Planorbis complanatus, Drap.

Neighbourhood of Lausanne; Lac du Brenet; Valley of the Rhone. Not common.

Planorbis corneus, Müll.

Berne, from M. Schmidt (Charp.).

Ancylus lacustris, Drap.

Lac de Bret; Roche (Charp.). It is still rather plentiful at Chamblande, the first Swiss locality indicated by M. Charpentier.

Cyclostoma maculatum, Drap.

Saléve, near Geneva.

Var. Albida.

Mont Tendre.

Acme fusca, Walker. *Auricula lineata,* Drap.

Lugano; Sion (Charp.); Belmont and elsewhere near Lausanne.

A variety, which is quite destitute of the longitudinally impressed lines, also occurred to me.

Valvata planorbis, Drap.

Lac du Morat (Charp.);—Les Pierrettes; Lac du Brenet; marsh between Martigny and St. Maurice.

Paludina abbreviata, Mich.

Prevon d'Avaux (Charp.).

Paludina marginata, Mich.

Carouge, near Geneva; Nyon (Charp.).

I will not pretend to meddle with the numerous so-called species of *Anodontæ* and *Uniones;* although I am satisfied that they may be all reduced to one or, at the most, two species of each genus.

Cyclas rivalis, Drap.

Lacs du Brenet et Bret; near Carouge, Geneva.

Var. Cyclas nucleus, Stud.

Chamblande, near Lausanne.

Var. Cyclas lacustris, Charp. (but *query* of Draparnaud ?).

Les Pierrettes, near Lausanne.

Cyclas calyculata, Drap.

Mont d'Orge (Charp.). In a pond on the Berne road, and at Les Pierrettes, near Lausanne; Visp.

The colour of specimens taken in the same place during the months of June and October differed considerably in intensity; being much darker in the latter month, when they perhaps put on their winter dress.

Var. Cyclas Ryckholtii, Normand (Cyclades de Valenciennes).

With the normal or typical form in the first locality indicated by me, but not common.

Pisidium obliquum, Drap.

Lac de Neufchâtel, près d'Yverdun (Charp.).

Pisidium fontinale, Pfeiff.

Pisidium pusillum, Jenyns; and var. *Pisidium minimum,* Stud.

In every pond and ditch. Common.

Pisidium cinereum, Ald.

In a small pond near Lausanne, on the Berne road; ditch near Le Pélerin; Visp. Local, but gregarious.

Pisidium nitidum, Jen. (1832).

Pisidium roseum, Scholtz (1843).

Lacs de Bret et Brenet; Visp. Rare.

I have thus added to the list of Swiss Mollusca the undermentioned species. *Vitrina elongata; Succinea Pfeifferi; Helix angigyra, H. Nautiliformis, H. radiatula, H. pura; Pupa inornata, P. Ferrari, P. pagodula, P. dilucida, P. Halleriana; Clausilia Moussonii, C. ornata, C. Stabilei; Limneus elongatus; Planorbis corneus; Paludina abbreviata, Pal. marginata; Pisidium cinereum, Pisid. nitidum*; being altogether twenty. One species (*Pupa Halleriana*) has been now described for the first time.

The complete list shows the following result with regard to the British Mollusca.

Swiss, but not yet indicated as British.

Vitrina diaphana.
—— annularis.
—— elongata.
Helix sylvatica.
—— cingulata.
—— zonata.
—— personata.
—— holosericea.
—— angigyra.
—— Nautiliformis.
—— unidentata.
—— edentula.
—— ciliata.
—— villosa.
—— cœlata.
—— clandestina.
—— strigella.
—— fruticum.
—— incarnata.
—— candidula.
—— apicina.
—— ruderata.
—— glabra?
—— petronella.
—— diaphana, *Stud.*?
Bulimus radiatus.
Pupa tridens.
—— quadridens.
Pupa inornata?
—— Ferrari.
—— pagodula.
—— doliolum.
—— Sempronii.
—— dilucida.
—— Halleriana.
—— Alpicola?
—— triplicata.
—— dolium.
—— granum.
—— avena.
—— frumentum.
—— variabilis.
—— Shuttleworthiana.
—— Desmoulinsiana.
Clausilia diodon.
—— ventricosa.
—— plicata.
—— Moussonii.
—— ornata.
—— Stabilei.
—— parvula.
Cyclostoma maculatum.
Valvata spirorbis.
Paludina abbreviata.
—— marginata.

Being in all fifty-five, inclusive of five doubtful species.

British, but not hitherto indicated as Swiss.

Testacella haliotoidea, *Drap.*
Vitrina Draparnaldi, *Jeffr.*?
Helix Cantiana, *Mont.*
—— Pisana, *Müll.*
—— virgata, *Da Costa.*
—— caperata, *Mont.*
—— fusca, *Mont.*
—— revelata, *Fér.*
—— globularis, *Jeffr.*
—— excavata, *Bean.*
—— lamellata, *Jeffr.*
Bulimus acutus, *Mont.*
Pupa Anglica, *Fér.*
—— substriata, *Jeffr.*
Azeca tridens, *Pulteney.*
Limneus glutinosus, *Müll.*
Limneus involutus, *Harvey.* If not a variety of last?
—— Burnetti, *Alder.* If not a variety of L. pereger?
Planorbis glaber, *Jeffr.*
—— lacustris, *Lightfoot.*
Assiminea Grayana, *Leach.*
Bithinia Leachii, *Sheppard.*
—— anatina, *Drap.*
Neritina fluviatilis, *Linn.*
Dreissena polymorpha, *Pallas.*
Unio margaritiferus, *Linn.*
Cyclas rivicola, *Leach.*
Pisidium pulchellum, *Jen.*
—— Henslowianum, *Shepp.*

Being in all twenty-eight, inclusive of three doubtful species.

The last list is taken from Forbes and Hanley's 'History of the British Mollusca,' being the latest and most accredited work on the subject. For the purpose of geographical distribution I include Ireland with Great Britain.